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LISBON SCHOOL OF ECONOMICS & MANAGEMENT
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MASTER

ACCOUNTING, TAXATION AND

CORPORATE FINANCE

MASTER'S FINAL WORK

DISSERTATION

Earnings Management determinants in non-listed European companies

Filipa Chedas de Sampaio e Sousa Pereira

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Co-adviser: Professor Rita Fuentes Henriques

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Abstract

The aim of this study is to determine accruals earnings management causes in non-listed companies. Prior surveys mostly exploit earnings management characteristics in stock-market corporations, thus the unlisted companies' sector has been left out of the academic research. However, it is known that unlisted companies are more likely to engage in earnings management practices than listed firms (Burgstahler et al., 2006). Throughout our investigation we've tried to find the main reasons behind accruals earnings management in non-listed firms and if there were specific motivations that explain why earnings management practices are more common in this sector. Using data collected from the Amadeus database, the work focuses on unlisted firms from fourteen European countries. Overall results provided evidence that «leverage», «size», «growth» and «assets profitability» (Return on Assets - ROA) are relevant to understand why companies engage in earnings management (which is in line with previous studies).

Key words: Accruals, Accruals Quality, Earnings Management, Non-listed Companies, Leverage, Size, Assets Profitability, Return on Assets (ROA).

Resumo

O objetivo do presente estudo é descobrir quais os determinantes da gestão de resultados por accruals nas empresas não cotadas europeias. Estudos anteriores baseiam-se essencialmente nas características da gestão de resultados nas empresas cotadas, ficando as empresas não cotadas postas, por vezes, de fora dos estudos académicos. No entanto, reconhece-se que é mais provável as empresas não cotadas incorrerem em práticas de gestão de resultados do que as empresas cotadas (Burgstahler et al., 2006). Ao longo da nossa investigação, tentámos perceber as principais razões por detrás da gestão de resultados por accruals nas empresas não cotadas e se existem motivações específicas que expliquem porque é que a prática de gestão de resultados é comum neste setor. Utilizando dados da Amadeus, o trabalho foca-se em empresas não cotadas de 14 países Europeus. Os resultados evidenciam que «leverage», «size», «growth» e «assets profitability» (Return on Assets – ROA) são relevantes para entender porque é que as empresas incorrem em gestão de resultados (o que está em linha com estudos anteriores).

Palavras-chave: Accruals, Accruals Quality, Earnings Management, Non-listed Companies, Leverage, Size, Assets Profitability, Return on Assets (ROA), Correlation

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Abbreviations

AQ – Accruals Quality

Big Four – the 4 biggest audit companies worldwide (PricewatherhouseCoopers, Deloitte, KPMG and Ernest & Young)

CEO – Chief Executive Officer

EM – Earnings Management

EU – European Union

FASB – Financial Accounting Standard Board

GAAP – Generally Accepted Accounting Principles

IEM – Informative Earnings Management

IFRS – International Financial Reporting Standards

OEM – Opportunistic Earnings Management

SFAC – Statement of Financial Accounting Standard Board

Reg FD – Regulation Fair Disclosure

U.K. – United Kingdom

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1. Introduction

The economic crisis in the financial market together with the public disclosure of related accounting scandals at the beginning of the 21st century (just like Enron in 2001 and Lehman Brothers in 2008) contributed to a breach of trust in what earnings quality, corporate governance, and auditors quality and independence was concerned. Levitt (1998) stated that "The rise of earnings management and the decline of quality of earnings are a financial community problem that urge for major actions to address financial reporting abuses, the performance of auditors and the responsibility of audit committees".

Because accounting earnings is the main source of companies' specific information and the core performance measure used by analysts and investors, is it important to study how today's society, especially the corporate community, addresses earnings management (Francis, Schipper & Vincent, 2003).

Earnings quality is a multidimensional concept with different definitions and different perspectives to evaluate. According to Dechow & Schrand (2004): "A high quality earnings number is the one that accurately reflects the company's current operating performance; is a good indicator of the future operating performance; and is a useful summary measure for assessing firm value". Because managers' self-interests can collide with the principles of the organization, recent studies have focused on the importance of earnings quality and earnings management.

Earnings management (EM) can be defined as the intentional misstatement of earnings to have figures reflecting values that couldn't be reach without manipulation. If managers take decisions in order to change earnings not for strategic reasons, this can be considered earnings management (Mohanram,

2003). Bearing in mind Dechow & Schrand definition it then becomes clear that those who need to decide over of any kind of financial statement should be able to clearly understand what earnings management is and why it takes place.

Most of existing studies focus more on stock-market companies and the quality of their information release, and earnings management in non-listed firms has not been very developed in previous surveys, though nowadays it is a matter that is receiving more attention. That is why this study concentrates on non-listed firms. In fact, recently it has been acknowledged that non-listed companies are more likely to engage in earnings management than listed firms (Burgstahler, Hail & Leuz, 2006). Ball & Shivakumar (2005) also concluded that, when compared with listed firms, non-listed companies can better accommodate losses but have lower quality financial reports due to different market demand conditions. Several authors also referred that reasons behind earnings management practices in non-listed firms and stock-market companies' might differ. Because we are dealing with people and will be applying a mathematical (exact science) analysis to a problem that has a strong behavioral variable (a subject normally addressed by the social sciences), it might be interesting to compare the results achieved with other studies and take it a step further, bringing together the «exact» and the «social» parts of what we see as a rather complex issue. Therefore the study's conclusions can trigger new lines of investigation, something we understand as yet an additional motivation to proceed with our investigation.

The investigation will thus try to respond to the key question, «what are the earnings management determinants on non-listed European companies».

For the purpose of the analysis we particularly focused on «accruals-based earnings management», which is characterized as the use of judgment, estimates or

assumptions allowed by accounting standards (Xu, Taylor & Dugan, 2007 and Li, Rider & Moore, 2009). «Accrual-based earnings management techniques» can be set to demonstrate financial reporting results that look more encouraging to a potential investor, though used within a legal framework. This makes it a potential tool that managers can get hold of to artificially boost their companies' results. As per the survey itself, we've used data from the Amadeus database. The information gathered relates to 5757 companies from fourteen EU countries, encompassing 17 different industries and a 10 years period (2006 to 2015). To uncover if unlisted companies actually use «accrual-based earnings management» (as proposed in our research question.), we've used a regression conform to the Dechow & Dichev (2002) model, adapting it to some of McNichols' (2002) variables.

Given the results reached through the descriptive statistics, we've concluded that «leverage», «size», «growth», «Return on Assets (ROA)» and the «Big Four» variables play a significant role on earnings management. In addition, the analysis of the correlation matrix showed that larger companies, with higher assets profitability, lesser sales variation and higher in debt, have worse earnings quality, meaning it will probably incur more in earnings management practices.

The work itself was structured along five chapters. Chapter two – that follows this introduction – is comprised by the Previous Literature and Research Development, bridging all the literature that supported the study and the questions to be answered. In the third chapter we explained the research methodologies, including the detailed variables used in the study as well as the sample. In chapter four we focused on the discussion of the results and on the analysis of the statistics. The fifth chapter is where we presented our main conclusions, elaborated about work limitations and forwarded suggestions for future studies.

2. Previous Literature and Research Development

As previously mentioned, earnings management and derived earnings quality have been the subject for innumerous studies, especially because there is a framework whereby it can be done legally. Notwithstanding, managers motivations can vary, and the handling of companies' results and outcomes becomes particularly sensitive if/when managers' self-interests collide with the stakeholders' interests. Whilst addressing those issues, different authors have used and put together a set of definitions, rules practices and procedures, that concurrently with their own analysis and considerations functioned as references and were of the utmost importance to our academic investigation. In this chapter we will review the main existing studies that can contribute to a better understanding of the main ideas underlying this work, namely the concepts of earnings management, and of accrual-based earnings, as well as the motivation behind it.

2.1. Earnings Management

2.1.1. Earnings Management – definition

Companies commonly try to maximize shareholders' value by carefully managing assets and goods acquired both through capital and debt, so that investors feel encouraged to invest as they expect high firm performances in the future. Firms' are interested in reporting positive earnings and positive earnings growth because it means that they can meet analysts' predictions in order to acquire capital (Degeorge, Patel & Zeckhauser., 1999). But it's not always easy to meet market's expectations, and firms need to find inventive ways to manage results in order to do it.

Earnings management (EM) is defined differently according to distinctive authors. Schipper (1989) argued earnings management is a "purposeful intervention in the

external financial reporting process, with the intent of obtaining some private gain (as opposed to merely facilitating the neutral operation of the process)". Healy & Wahlen (1999) argued that "earnings management occurs when managers use judgement in financial reporting in order to change financial reports to either mislead some stakeholders about the underlying economic performance of the company, or to influence contractual outcomes that depend on reported accounting numbers".

One of the most well-known EM practices is called «earnings smoothing». Earnings smoothing is done by reducing earnings and cash flows variations in order to make them less unstable. By subjectively making use of standing rules, managers will thus change financial reports and handle financial statements as best suited to meet investors and stakeholders predictions and to change their opinion about the company economic performance, or to influence contracts that may depend of accounting results (Healy & Wahlen, 1999).

2.1.2. Earnings Management - perspectives

As per Beneish (2001) there are two EM perspectives: (a) «Opportunistic Earnings Management» (OEM) and (b) «Informative Earnings Management» (IEM).

(a)«Opportunistic earnings management» (OEM), is defined as the act of altering the financial information released to mislead stakeholders. It happens when managers see an opportunity to mask firm's low performance, pretending the company is higher in profit than truly is (Beneish, 2001). The same author also explained that this can create problems through high free cash flow. In fact, if there's a surplus of free cash flow to finance any project, and managers wrongly invest it or invest it disregarding stakeholders' interests or wealth, it may lead to low-return investments that can threaten a competitive firm's position in the market.

Also, the higher the free cash flows, higher the ambition of managers for self-gain or benefit (Ross, 1973; Jensen & Meckling, 1976; Jensen, 1986; Gul & Tsui, 2001).

For Guay, Kothari & Watts (1996), opportunistic behaviors are a way of manage earnings by reducing reporting accuracy, while Christie & Zimmerman (1994) defended that opportunistic EM occurs when managers increase their own wealth, but do not increase the wealth of contracting parties as a whole. This is particularly the case when management and ownership is not directly related – thus potentially separating managers from dividends' sharing decisions – or when management flexibility is limited by accounting constraints (Warfield, Wild & Wild, 1995). Still, Fudenberg & Tirole (1995) added that opportunistic EM can manifest in different forms, namely through managers' concern in maintaining their position in the company or avoiding competitors.

(b)«Informative perspective» (Informative Earnings Management – IEM) is defined as adding firms' private expectations about future cash flows to the financial information, in order to better support the stakeholders' decision making process. As managers are deeply involved in firm's operating and investment decisions, they're able to easily access more and better information about future scenarios. This may motivate managers to use discretionary accruals to better mirror economic performance in reported earnings when communicating that information to investors (Gul, Chen & Tsui., 2003). According to Fishman & Hagerty (1989) low investment in firms can be explained by agency problems namely investors' difficulty to monitor management investment decisions. There is then an incentive for companies to be more transparent and disclosure more information to make a better use of investment opportunities, trigger investors' attention and reduce underinvestment (Fishman & Hagerty, 1989).

Either way IEM stands as a mean for managers to communicate their knowledge to investors through high valued private information, with discretion set by Generally Accepted Accounting Principles (GAAP), whilst OEM would normally be a preferred choice when managers' strategy do not consider private information to be relevant (Healy & Palepu, 1993 and Gul et al., 2003).

2.1.3. Differentiating earnings management from earnings expectations and fraud

Though this study is focused in EM, it is important to differentiate this concept from «expectations management» and fraud.

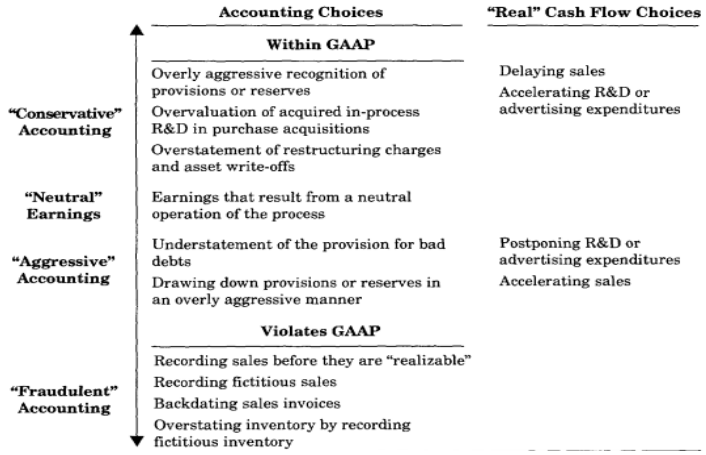
Bartov et al. (2002) defined «expectations management» (or forecast guidance) as the process of driving down analysts' earnings predictions in order to create a positive earnings surprise (or avoid a negative earnings surprise) upon earnings release.

EM, in turn, usually involves using accrual accounting in order to enhance results to exceed the estimated earnings' goal. Li et al. (2009) also said that EM is defined as the best accounting policies that suit a desired financial reporting result. EM can therefore be used to mask results and bring it closer to «expected outcomes». But EM can also be regarded as a form of result's manipulation, something that undermines investors' confidence. Both «earnings management» and «expectations management» can be used (together and/or separately) to try to control market's reaction to unexpected corporations' outcomes.

It is also important to differentiate EM from fraud. Dechow & Skinner (2000) defended that EM respects the Generally Accepted Accounting Principles (GAAP), while accounting fraud break them. Mulford & Comiskey (2011) added that fraud is

a pre-determined action to make a company's performance look better than it is in reality throughout material irregularities and not simple accounting errors. The National Association of Certified Fraud Examiners (1993, pp. 12) defines financial fraud as "…the intentional, deliberate, misstatement or omission of material facts, or accounting data, which is misleading and, when considered with all the information made available, would cause the reader to change or alter his or her judgment or decision". Dechow & Skinner (2000) summarize (Figure 1) the different types of managerial choices, separating those characterized as fraud from the ones that involve acceptable accounting management options.

Figure 1: The distinction between Fraud and Earnings Management



Source: Adapted from Dechow &

They showed that while accounting fraud implies intent to deceive, other accounting exercises ("Conservative", "Neutral" and "Aggressive" accounting) may be consented within GAAP but need to be tested against managerial intent. Determining «intent» is paramount when judging the true consequences of management's decisions, as these might easily fall within the broad classification of fraud even when undertaken as a strategy that conforms to GAAP.

2.2. Motivations for Earnings Management

Healy & Wahlen (1999) and Fields, Lys & Vincent (2001) pointed out three main reasons for EM: capital markets, contracting and regulatory motivations.

Capital markets motivations are related with listed firms and the influence in stock prices by reported accounting information. Once stock prices in non-listed firms are not publically traded, this motivation should not be considered to justify EM in non-listed companies (Healy & Wahlen, 1999 and Fields et al., 2001). Because our study focuses on non-listed firms, capital market motivations will not be a variable for us.

Contracting motivations are related to contracts between companies and their contracting parties. EM may result from executive compensation contracts to maximize CEO's remuneration if there's an explicit or implicit link among executive compensation and accounting numbers (Healy, 1985 and Holthausen, Larcker & Sloan, 1995). Another contracting motivation example is manager earnings to accomplish debt covenants requirements (Sweeney, 1994). Contracting motivations in listed firms can thus result in internal conflicts (executive compensation) or external conflicts (obligations to lenders or minority shareholders) (Healy & Wahlen, 1999 and Fields et al., 2001).

Regulatory motivations are associated with the need to meet government regulation that is accounting sensitive, such as taxation, banks' and insurance companies' capital acceptability rates, or fair competition legislation. Tax based EM depend on the degree of book-tax conformity, which differ from country to country (Healy & Wahlen, 1999 and Fields et al., 2001).

According to Healy & Wahlen (1999) and Fields et al. (2001) companies may want to defer income and to advance expense in order to reduce payable taxes. Also,

Kasanen, Kinnunen & Niskanen (1996) concluded that having a dividend policy as a form of regulation may enhance EM practices, as managers focus on maximizing present value of future dividends to shareholders. However, tax regulations don't appear to be relevant for EM in countries with weak book-tax alignment (Kasanen et al., 1996).

Abdolmohammadi, Kvaal & Langli (2010) stated that motivations for EM are different when stock-market and non-listed firms are concerned. The authors even separated family from non-family private enterprises, and hypothesized that family businesses have more tendency to upward results. Analyzing some firms' characteristics such as «time in-business», size, growth, profitability and auditor (Big Four or not), these authors found CEO's in family corporate take EM priorities more serious than non-family CEO's, concluding independent boards should be applied in family firms to help mitigate EM.

In conclusion, the need to avoid agency problems, to reduce tax burden and/or to ease a particular dividend patterns are some of the reasons behind EM in non-listed companies (Abdolmohammadi et al., 2010). However, managers' motivations are not the only reasons responsible for the quality of financial reporting (Ball, Kothari & Robin, 2000 and Bushman & Piotroski, 2006). The institutional setting and users' requirements also assume an important role in this field. While listed firms are subjected to International Financial Reporting Standards (IFRS), non-listed companies are only dependable of external control, carried out by their auditors. That said, EM can result from flexible accounting standards, unassertive supervision, low litigation risk and transparency degree of privatenon-listed firms' financial reporting (Abdolmohammadi et al., 2010). Abdolmohammadi et al. (2010) determined that there are more opportunities in non-listed firms to manage results,

especially when countries have more flexible local GAAP than international GAAP (IFRS) and moderate book/tax alignment. Although financial statements in non-listed firms are subjected to audits and are public to their users, they're less scrutinized by supervisors, analysts and the media.

2.3. Accrual-based earnings management

2.3.1. Definition of accrual based earnings management

Xu et al. (2007) characterized accruals-based EM as the use of judgment, estimates or assumptions allowed by accounting standards, through recovering values of long-term assets and expected lifespan, deferred taxes, losses from asset impairments and bad debt, obligations for pension benefits and other post-employment benefits. Li et al. (2009) defined accrual-based EM as a technique by which managers bend assumptions and estimations inside the accounting system. They also described accruals as the difference between net income and cash flows.

«Accrual-based EM techniques» are consequently set to demonstrate financial reporting results that look more promising to a potential investor.

According to Healy & Wahlen (1999), when managers book accruals for events that require accounting standards discretion, such as «losses from bad debts, asset impairments and the salvage value of long term assets», one can expect to find accruals' EM, once those assessments might impair on third party perception about corporate economic performance.

EM can be conducted either by accrual based management or through real[1] activities' manipulation (Cohen & Zarowin, 2010). Despite the recent preference

[1] According to Roychowdhury (2006) earnings management through real operations is defined as the deviation from the normal business operations with the objective of changing the cash flow.

from companies for the latter (Graham, Harvey & Rajgopal, 2005), we will here focus on accrual based EM.

2.3.2. Types of accruals

In accordance with Li et al. (2009) accruals can be separated in two types: discretionary or non-discretionary.

Non-discretionary accruals refer to EM practices that focus on the increase or decrease revenues through the creation of accruals. If non-discretionary accruals are a function of revenue, negative deviations resulted from accruals' estimation are, consequently, a result of non-discretionary adjustments (Jones, 1991).

Discretionary accruals convey to changes in reported earnings (managers' choices to influence reported earnings) and include increase or decrease estimates of bad debt reserves, warranty costs and inventory files.

In most of the literature, accruals result from the sum of discretionary and non-discretionary accruals. Dharan (2003) concluded that nowadays the use of accruals within EM became increasingly common in big corporations. It stands as an activity by which a manager increases or decreases the levels of accounting accruals (such as accounts receivable, inventory, accounts payable, deferred revenue or accrued liabilities) to attain the foreseen results. Managers can also make use of Generally Accepted Accounting Principles to create a surplus instead of a deficit and consequently modify reported results to meet quarterly targets for a particular division.

Dharan (2003) identified three main features associated with the use of accruals: they permit to manage the income statement, not concerning with potential effects that might occur in other financial statements; they're easy to control when linked to

accounting decisions, whereby there's no need to create new business transactions; and EM might involve one or a small group of managers, and not the entire company. Simultaneously, the Statement of Financial Accounting Concepts (SFAC) number 6, paragraphs 139 and 145 in the 1985's Financial Accounting Standard Board (FASB), maintains that whilst accruals should only reflect the true performance of a firm, registering revenues and expenses only at the period they occurred, they're often also used to manipulate earnings (Joosten, 2012).

2.3.3. Constraints on accrual-based earnings management

While accrual-based EM can increase reported earnings, it demands for the creation of an «accrual entry» in the company's balance sheet, a «variable» also referred as «deferred subscriber acquisition cost» (Dharan, 2003). This is however not a permanent entry and tends to be amortized over time, meaning it will translate into future losses for the company, consequently reversing the short term income benefit on specific items such as inventory, accounts receivable, accounts payable and capitalized costs, and suppressing future stock prices. This will also turn planned or unplanned EM ineffective when considering it altogether over a period of time (Dharan, 2003).

In short, accrual-based EM can be limited by different aspects. One is auditing. Big auditors firms, like the Big Four, are manned by experienced people, who have lifelong professional training and face more reputational risk than small audit companies. Therefore, big audit firms invest more in resources to detect accrual EM and to account for related bad practices (Becker et al., 1998).

Further, Barton & Simko (2002) concluded that the capability of a firm to manipulate earnings through accruals is constrained by past periods' accruals if they are not reversed beforehand. Higher values of net protected operating assets

translate into lower accounting flexibility, meaning that a company's operating cycle affects its accounting flexibility. Zang (2012) added that accrual reversals are larger as the operating cycle becomes longer. Also, Leuz, Nanda & Wysocki (2003) established an inverse relation between investor protection and accrual EM. This is because when investors are better protected, managers' ability to control «private benefits» decreases as does the motivation to mask firm's economic performance.

In short, accruals-based EM can become ineffective because of "deferred subscriber acquisition costs", when considering it altogether over a period of time (Dharan, 2003), and either be constrained by auditors' scrutiny (Becker et al., 1998), firm´s operating cycle (Zang, 2012) and accounting flexibility (Barton & Simko, 2002), or investors' protection (Leuz et al. 2003).

2.4. Earnings management in non-listed firms

Despite most of the studies focus more on listed companies and the quality of their information release, recent studies are concerned on the demand and supply of financial reporting quality in non-listed companies. Burgstahler, Hail & Leuz (2006), for instance, concluded that non-listed corporations are more likely to engage in EM than listed firms, and that stronger legal systems are a disincentive to EM in both types of companies; in turn, Ball & Shivakumar (2005) uncovered that comparing with listed , non-listed companies can better accommodate losses but have lower quality financial reports, which might be explained by the significantly different market demand conditions.

According to Ball & Shivakumar (2005)**,** non-listed firms' stakeholders have better corporate management control because of their strong ownership, a greater demand for information, and by thoroughly monitoring and influencing business decisions.

Nevertheless, and as opposed to the stock-market sector, their financial statements are unequally disclosed among the tax payers but may be more biased by tax objectives. Coppens & Peek (2005) added that tax minimization and better agreements with banks (usually the financial source for non-listed companies), suppliers, customers, employees and governments, may be a cause for EM and for the development of enduring income-increasing accounting strategies. Those agreements encompass costs and amount of trade credit, selling prices, payment terms of products supplied to consumers and employees' wages and benefits. Bowen, DuCharme & Shores (1995) concluded that even in the absence of capital market pressures, non-listed firms still try to avoid reporting minor losses.

Managers' self-interests may also lead to the manipulation of a company's economic performance thus deceiving stakeholders or influencing contractual terms that are based on reporting accounting numbers (Healy & Wahlen, 1999).

Given the different reasons behind EM among non-listed companies and listed firms, one fundamental reason to study the former is that there's still little work done about it, even though non-listed companies represent the main EU economy and the EU market. Because of that, malpractices among non-listed corporations can have a very strong impact in the economy (Leuz et al., 2003).

2.5. Research Question

This study will try to respond to a central question:

What are the EM determinants in non-listed European companies?

The response to this question will help us to find whether a particular reason, or a set of closely related reasons, are more valued than others when EM is concerned.

When discussing the possible approaches to the problem, we've decided not analyze each area of business as a variable. Although we might learn (or not) that a particular set of industries would look more motivated towards EM than others, we've anticipated that both the size of the sample and other outstanding issues (like context of operations, countries´ legal framework, etc.) would not allow for a decisive conclusion.

Furthermore, as we've learned from Healy & Wahlen (1999), managers' self-interests is another variable to take into consideration. And as mentioned by Christie & Zimmerman (1994), opportunistic EM is a tool used by managers that aim to increase their own wealth, but that are not worried with the wealth of contracting parties as a whole. Although being an important issue, manager's self-interest is also something very difficult to evaluate because we would need to study managers' profiles and personality. This shows that «behavior» may also be regarded as another EM determinant and suggests there are others possible lines of investigation along this path. One of such lines could address issues like managers wanting to develop a good reputation to improve their professional competence and apply for new jobs, what would made them less available to mask results than the ones that know they will no longer be promoted (focusing on immediate gains and benefits instead).

3. Research Methodologies

To try uncover if non-listed companies use accrual-based EM, we'll be analyzing data from Amadeus through a regression conform to the Dechow & Dichev (2002) model, adapting it resorting to some of McNichols' (2002) variables, as detailed ahead. We've based the study on the value of the «Accruals Quality» (AQ) variable,

and on its correlation with other variables, as it stands as an (inverse) expression of earnings quality.

Earnings quality is defined differently accordingly to the author. Some authors say that earnings quality might vary over time, because different estimates in different time periods will result in changing patterns of earnings, cash flows and accruals (time series properties of earnings). Others argue that quality of earnings is better if truthfully denoting the economic effects of fundamental transactions and events (McNichols, 2002). Dechow & Dichev (2002) defended that there's a strong relation between current accruals and past, present and future cash flows, and explain that the level and quality of accruals follow each other to explain results. If there's a correct allocation of cash flows to the reference periods, accruals can contribute to a better performance throughout a firm's results. However, once accruals work as estimates and assumptions, they should be corrected in the future if there are changes in predictions. Future outcomes depend on those corrections, meaning errors affect the information based in accruals about cash flows and future results. Accruals quality is thus measured through the working capital reflected in the operating cash flow results, and the beneficial role of accruals falls with eventual estimation errors (Palepu & Healy, 2000).

Still, Dechow & Dichev (2002) agreed that accruals quality is also related to companies' characteristics, independently of intentional EM, and might be perceptible and recurring if compared to determinants of opportunism management (these being many times unnoticeable or sporadic, the volatility of operations is usually related to the propensity to make estimation errors). Firm's observable characteristics, as the length of the operating cycle, operations' changeability, size, accruals magnitude, consecutive losses, sales, cash flows and profit variability, are

all tools to evaluate accruals' quality. They thus concluded that higher sales, accruals and cash flows' volatility, mirror an instable operational environment, taking to higher estimation errors and lower quality of accruals. Equally, larger magnitude accruals means more accruals and more propensity for estimation errors, so poorer accruals' quality. Referring to the operational cycle of a company, larger cycles mean the company is more expose to uncertain situations, which in return reflects in lower accruals' quality.

This study main focus is the working capital accruals, where by Dechow & Dichev (2002) model «Earnings equal Cash Flows plus Accruals» («E = CF + Accruals»), and the benefit of using accruals encompasses the cost of having both the estimation and the correction of estimation errors as a measure of performance. Accordingly, when there's place for corrections, future earnings are influenced by accruals' assumption errors about future cash flows. The Accounting Principles, the accounting standards, or a management' inability to estimate incomes in the most accurate way might be some of the causes for those estimation errors.

Dechow and Dichev's model has, however, some constraints. In a situation where there are deferred taxes or depreciation (equaling a time interval prior or subsequent to the *t*-1 and *t*+1 periods) the model is not functional/adequate, because accruals / earnings' quality are considered as current accruals. Consequently the current analysis will exploit a modified Dechow & Dichev's (2002) model, adding McNichols' (2002) revenue variation, and property, plant and equipment variables, as it will reduce evaluation errors and potentially contribute to a better explanation of the original model (Miranda, 2013).

The reference model stands over the following equations:

$$WCA_{i,t} = \beta_{0,I} + \beta_{1,i}CFO_{i,t-1} + \beta_{2,i}CFO_{i,t} + \beta_{3,i}CFO_{i,t+1} + \beta_{4,i}\Delta Rev_{i,t} + \beta_{5,i}PPE_{i,t} + \varepsilon_{i,t} \quad (1)$$

Where:

$WCA_{i,t}$ = *i* Company's Working Capital Accruals in period *t*;

$CFO_{i,t-1}$ = *i* Company's Operating Cash Flows in period *t*-1;

$CFO_{i,t}$ = *i* Company's Operating Cash Flows in period *t*;

$CFO_{i,t+1}$ = *i* Company's Operating Cash Flows in period *t*+1;

$\Delta Rev_{i,t}$ = *i* Company's revenue variation between periods t and *t*-1;

$PPE_{i,t}$ = *i* Company's Property, Plant and Equipment in period *t*;

$\varepsilon_{i,t}$ = *i* Company's Estimate Residuals in period *t*.

As per the later equation, accruals are measured through the working capital equation errors ($\varepsilon_{i,t}$), assuming it will counterweigh for the time gap between the moment of a firm's economic achievements and sacrifices and its associated cash flows records, thus allowing for a better company's based earnings performance. The estimation error is the difference between the amount accrued and the amount realized. Period *t*'s earnings thus include the opening error to be realized in *t*+1 when actual (*t*) and projected (t+1) cash flows are compared, and the reversing error, denoting the cash flows realized in period *t* that differ from the estimations in period *t*-1 (McNichols, 2002).

Working Capital Accruals and Operating Cash Flows were calculated as follows:

a. Working Capital Accruals (WCA):

$$WCA_{i,t} = \Delta CA_{i,t} - \Delta CL_{i,t} - Cash_{i,t} + \Delta Debt_{i,t} \quad (2)$$

Where:

$\Delta CA_{i,t}$ = *i* Company's Current Assets variation between years *t*-1 and *t*;

$\Delta CL_{i,t}$ = *i* Company's Current Liabilities variation between years *t*-1 and *t*;

$\Delta Cash_{i,t}$ = *i* Company's Cash variations between year *t*-1 and *t*;

$\Delta Debt_{i,t}$ = *i* Company's Debt variations in current liabilities between years *t*-1 and *t*.

b. Operating Cash Flows (CFO)

$$CFO_{i,t} = NIBE_{i,t} - (\Delta CA_{i,t} - \Delta CL_{i,t} - \Delta Cash_{i,t} + \Delta Debt_{i,t} - Dep_{i,t}) \quad (3)$$

Where:

$NIBE_{i,t}$ = *i* Company's Net Income Before Extraordinary Items at period *t*;

$Dep_{i,t}$ = *i* Company's Depreciation and Amortization Expense at year *t*.

After the estimating in equation (1), the calculated quality measure for accruals (AQ) is done through the residuals' standard deviation, $AQ_{i,} = \sigma\ (\varepsilon_{i,})$ (4).

As already mentioned, when AQ increases accruals quality decreases and company earnings' quality also diminishes.

3.1. Model and Variables

As detailed in chapter 7.(Attachments), Table I – Variables, the multivariable model to test the hypothesis of this study and to answer the research question is defined as:

$$AQ_i = \beta_{0,i} + \beta_{1,i}\ Big\ 4_i + \beta_{2,i}\ Size_i + \beta_{3,I}\ Lev_i + \beta_{4,i}\ \Delta Growth_i + \beta_{5,i}\ ROA_i + \beta_{6,i}\ Country_i + \beta_{7,i}\ Industry_i + \varepsilon_i \quad (5)$$

According to DeAngelo (1981) the permanent concern about reputation and market position induces Big Four audit companies towards higher quality and diminish penalties, which making them incur less in EM. Bigger companies are as well less willing to involve in EM because of litigation risk, hence management transparency improves, resulting in a more straightforward financial reporting (Van Tendeloo & Vanstraelen, 2008; Watts & Zimmerman, 1990; Young, 1999 and Boone et al., 2010). On the other hand, companies with a higher leverage ratio induce more in

EM since they need to avoid debt contracts violations. But those practices can be reduced when there's a place for contract's renegotiation and firms find themselves in a great financial stress (Van Tendeloo & Vanstraelen, 2008; Watts & Zimmerman, 1990; Young, 1999 and Becker et al., 1998).

Volume of sales is yet another relevant variable to evaluate different firms' performance, with higher volume of sales being associated to higher level of EM (Van Tendeloo & Vanstraelen, 2008 and Boone, Khurana & Raman, 2010). These authors came to the same conclusion when assets profitability is considered.

In addition, and much to our own belief, Van Tendeloo & Vanstraelen, 2008 and Boone et al., 2010 anticipated different «countries' characteristics» and «type industry» could influence the level of EM thus becoming an interesting subject for further studies.

3.2. Data and Sample

The data was collected from database Amadeus. These data were initially composed by 10870 companies, sorted by: companies from European Union (15 countries); unlisted companies; all commercial activities, except financial and insurance corporations, public administration, defense, and compulsory social security (Miranda, 2013); medium, large and very large companies (covering a number of employees between 50 and 250). After eliminating companies with no data, the final figures set at 5757. Also, for lack of information respecting operating revenue and tangible fixed assets from Denmark in the time chosen, it was discarded.

As we can see in Table I – Sample composition by industry and auditor type, and in Table II – Sample composition by country and auditor type, the majority of the sample regards to companies from sector C (Manufacturing), G (Wholesale and

retail trade; repair of motor vehicles and motorcycles); and M (Professional, scientific and technical activities). These are also the sectors that include more firms that have both been audited and non-audited by the Big Four auditors (see paragraph 7. (Attachments), Table II – Industry Dimension). In general there are more companies not audited by the Big Four than audited (66% against 34%).

In terms of countries, the sample is mainly composed by companies from the United Kingdom (39%), Italy (22%) and France (12%). The United Kingdom is the country that has more companies audited by the Big Four's (13%), followed by France (7%) and Sweden (4%). Noteworthy, the United Kingdom and Italy are the two countries with more companies not audited by Big Four auditors (26 and 21% respectively).

Table I – sample composition by industry and auditor type

Industry Sector	Sample		Big Four Auditor		No Big Four Auditor	
	Number of companies	Percentage	Number of companies	Percentage	Number of companies	Percentage
A	64	1,11%	16	0,28%	48	0,83%
B	29	0,50%	16	0,28%	13	0,23%
C	1677	29,13%	593	10,30%	1084	18,83%
D	37	0,64%	27	0,47%	10	0,17%
E	58	1,01%	18	0,31%	40	0,69%
F	475	8,25%	157	2,73%	318	5,52%
G	935	16,24%	332	5,77%	603	10,47%
H	335	5,82%	114	1,98%	221	3,84%
I	221	3,84%	68	1,18%	153	2,66%
J	379	6,58%	146	2,54%	233	4,05%
L	71	1,23%	15	0,26%	56	0,97%
M	469	8,15%	181	3,14%	288	5,00%
N	417	7,24%	140	2,43%	277	4,81%
P	121	2,10%	17	0,30%	104	1,81%
Q	297	5,16%	49	0,85%	248	4,31%
R	104	1,81%	44	0,76%	60	1,04%
S	68	1,18%	27	0,47%	41	0,71%
Total	**5757**	**100%**	**1960**	**34,05%**	**3797**	**65,95%**

Table II – sample composition by country and auditor type

Country	Sample		Big Four Auditor		No Big Four Auditor	
	Number of companies	Percentage	Number of companies	Percentage	Number of companies	Percentage
Austria	36	0,63%	0	0,00%	36	0,63%
Belgium	429	7,45%	180	3,13%	249	4,33%
Denmark	0	0,00%	0	0,00%	0	0,00%
Finland	161	2,80%	116	2,01%	45	0,78%
France	692	12,02%	382	6,64%	310	5,38%
Germany	86	1,49%	56	0,97%	30	0,52%
Greece	79	1,37%	29	0,50%	50	0,87%
Ireland	21	0,36%	14	0,24%	7	0,12%
Italy	1252	21,75%	62	1,08%	1190	20,67%
Luxembourg	4	0,07%	0	0,00%	4	0,07%
Netherlands	7	0,12%	5	0,09%	2	0,03%
Portugal	61	1,06%	8	0,14%	53	0,92%
Spain	264	4,59%	132	2,29%	132	2,29%
Sweden	428	7,43%	226	3,93%	202	3,51%
United Kingdom	2237	38,86%	750	13,03%	1487	25,83%
Total	**5757**	**100%**	**1960**	**34,05%**	**3797**	**65,95%**

4. Results

4.1. Correlation Matrix

Table III represents the correlation matrix for the variables chosen for this study.

Table III – Variables Correlation Matrix

	AQ	Lev	Size	Growth	ROA	Big Four
AQ	1	0,003	0,360**	-0,058**	0,031**	-0,007
Lev		1	-0,039**	-0,002	-0,083**	-0,008*
Size			1	-0,018**	0,010*	0,075**
Growth				1	-0,002	0,004
ROA					1	0,015**
Big Four						1

* and ** - indicate 1% and 5 % correlation levels respectively (Pearson Correlation)

AQ = Accruals Quality; Lev = leverage; Size = logarithm of total assets; Growth = operating revenue variation; ROA = Return on Assets using net income; Big Four = dummy variable assuming "1" if the company was audited by a Big Four audit or "0" otherwise.

Through the correlation table it is possible to conclude that «leverage» establishes a positive correlation with the dependent variable accruals quality (0,003), meaning most indebted companies have lower earnings' quality (or vice versa, less indebted firms have higher earnings' quality). Also, «size» and «ROA» have a positive

correlation (0,360 and 0,031 respectively) meaning bigger companies and firms with a higher value of ROA have worse estimated accruals quality and, consequently, less earnings' quality as well. It is also interesting to observe the correlation between the most significant variables. When linking «leverage» and ROA, or «size» and «ROA», we can see that more indebt firms present lower levels of ROA (-0,083), while bigger companies have better ROA (0,010). In general «leverage», «size» and «ROA» are positively correlated with AQ, whilst «growth» is negatively correlated with AQ. Therefore, larger companies with higher ROA, lesser sales variation and more indebt have a worse earnings quality.

The results obtained are not all in line with some of the referenced authors. According to Van Tendeloo & Vanstraelen (2008) and Davis, Soo & Trompeter (2009) higher assets profitability, equaling a higher ROA, is associated with lower EM practices, while we conclude to the contrary. The same happens when the authors address the «size» variable. Otherwise, our conclusion about leverage seems to be in line with Van Tendeloo & Vanstraelen (2008) assumption, whereby firms with high level of leverage are more willing to practice earnings management.

4.2. Descriptive Analysis and Evaluation of the Results

When analyzing Table III – Descriptive Statistics, in paragraph 7. (Attachments), it is possible to see that, except for «growth» with a -1,968 mean value, all variables have a positive mean. Through the descriptive statistics is it also possible to conclude that our variables don't follow a symmetric distribution (mean and median have different values for each variable), what is confirmed by the kurtosis parting from the normal function (3).

In general, and again except for «growth», the standard deviation tends to be small, meaning there's no significant data dispersion (data is clustered around the mean).

Each company's WCA and CFO values were calculated through equations 2 and 3, and later used to estimate the regression (1). Upon this, standard deviation from residuals could be obtained for each industry and for the total of companies.

Table IV - Regression Model Results

	Coefficient	P-value	Signal
Constant		0,000	
Lev	0,028	0,000	+
Size	0,362	0,000	+
Growth	-0,051	0,000	-
ROA	0,03	0,000	+
Big Four	-0,022	0,000	-
Country dummy		Yes	
Industry dummy		Yes	
N° of observations		5757	
F Test		0,000	
Adjusted R square		0,134	

AQ = Accruals Quality; Lev = leverage; Size = logarithm of total assets; Growth = operating revenue variation; ROA = Return on Assets using net income; Big Four = dummy variable assuming "1" if the company was audited by a Big Four audit or "0" otherwise.

Through Table IV – Regression Model Results, it's possible to see that the variables «lev», «size», «growth» and «return on assets (ROA)» seem to be meaningful at both a 5 and 10% level of significance. This means that leverage, size, growth and ROA might be seen as reasons for EM. When those variables have a positive sign, this means there is a positive relation with the AQ variable and consequently companies will display worse accruals quality. That's what happens with the, «lev», «size» and the ROA variables (see correlation matrix in paragraph 4.1. for details), thus higher indebt firms, larger (bigger size) firms and companies with better return on assets will have worse accruals' quality.

In regards to the «leverage» variable, our findings agree with Watts & Zimmerman (1990) who explained that high leverage firms are more prone to EM because they want to avoid the violation of debt covenants. However, in what «size» is concerned we've concluded against Van Tendeloo & Vanstraelen, 2008, who believe larger firms' managers will engage less in EM to avoid litigation risks. The same happened for «growth», where our analysis did not abide to all of the referenced literature. Boone et al. (2010) and Van Tendeloo & Vanstraelen (2008), for instance, concluded that higher volume of sales is associated with higher levels of EM, stating that higher sales volatility mirrors an instable operational environment, taking to more estimation errors and lowering the quality of accruals.

Looking to the "Big Four" variable, it seems also to be significant. However it has a negative correlation with the dependent variable AQ, meaning companies audited by the Big Four's audits incur less in EM practices, once they usually produce better quality accruals. This follows DeAngelo (1981) and Van Tendeloo & Vanstraelen (2008) conclusions, for whom auditors need to maintain a sound reputation in the a very competitive market, and will do the utmost to ensure the quality of their work so not to endanger that reputation.

As per the «countries' dummy–variable», it is not statistically relevant, denoting localization is a reason to link a company to its quality of accruals.

Examining trends against type of industry, the later appears not to be significant to explain EM. Nevertheless, some industries as A, D and P, where p-values range from 0,038 to 0,254, denote that there are some areas more significant than others. But taking into consideration the descriptive statistics in paragraph 7. (Attachments), Table IV – Descriptive Statistics for AQ for each industry, industries D, E and S arise as more significant, putting either findings against each other and

denoting we cannot conclude about a direct relationship between type of industry and EM as it is influenced by a multiplicity of factors.

Therefore, despite the regression outcomes, we would need to deepen the analysis over other variables if wanting to conclude whether particular industries show an increased tendency towards EM than others, as already mentioned.

All in all, our findings may have been influenced by the environmental context and the «human behavior», all driving available data and derived statistical analysis with a decisive impact on the results attained. The reference period of our sample goes deep into the years of the financial crisis, where there were several setbacks in the overall sales market, with different variables being simultaneously affected. Because we're actually looking at firms' and managers' behaviors, diverse reference periods, dissimilar contexts and/or an unusual combination of effects can trigger distinct type of responses, which may be a cause why our analysis didn't confirm some of the literature findings. Matsumoto (2002) valued «earnings surprise behavior» as a variable that evaluates differences in firms performances that manage their earnings distinctively to be in an economical advantage[2] or simply because companies' managers' are moved by different motivations.

In addition, Ball & Shivakumar, (2005) believed non-listed firms' financial statements are possibly more influenced by tax reasons than any other motive. This suggests that despite their significance some variables may have a stronger impact in the results than others therefore there might be the need to unequally balance variables to better mirror determinants weights in the final results. This may stand as yet another suggestion for future investigations.

[2] A practice that can be enhanced in times of crisis, such as the period of the sample.

Though previous comments cannot be regarded as a direct conclusion of the study, we see it as one possible explanation to what we found to be a very complex problem / challenge.

5. Conclusions

5.1. General overview of the study

The purpose of this study was to understand accruals earnings management determinants in European unlisted firms.

To answer that question we've exploited an existent model, defined by Dechow & Dichev (2002) and modified by McNichols (2002), setting the dependent variable as the accruals quality measure (AQ). The sample was composed by 5757 companies from 14 European countries, considering a 10 year period (2006 a 2015), with data been collected from the Amadeus database.

The results indicated that «leverage», «size», «growth», and «return on assets » are statistically significant variables to explain our dependent variable Accruals Quality (AQ), and that it might be considered as possible reasons for EM. Except for the case of «growth», all those variables establish a positive relation with the variable AQ, suggesting more in debt, bigger and with higher assets profitability companies have worse accruals quality and, consequently poorer earnings quality (thus more susceptible to handle results).

The Big Four variable in our study is also significant, indicating that companies audited by the Big Four auditors would incur less in EM.

With respect to the «leverage» variable, the results suffice to sustain that it might be significant to explain Accruals Quality (AQ). Furthermore, there is a positive

correlation between the former and the latter, confirming that high leverage firms are more expected to incur in EM.

In terms of «size», we've concluded that larger firms are more prone to EM.

Our «growth» variable is also statistically significant and has a negative correlation with AQ.

«Return on Assets» also proved as significant, positively relating with the AQ variable, thus being linked to lower accruals and earnings quality (and to firms more probable to incur in EM).

Through the descriptive analysis we've also determined that the most relevant variables influencing accruals quality are «leverage», «size», «growth», «return on assets» and «Big Four».

In sum, we found «leverage», «size», and «ROA» are positively correlated with AQ and «growth» negatively correlated with AQ. Therefore we've concluded that larger non-listed companies with higher ROA, lesser sales variation and more in debt have a worse earnings quality hence stronger tendency towards EM.

5.2. Limitations

Despite acknowledging that the prevailing financial / economic crisis may definitely impact on the results – as advanced in paragraph 4 – it could not be fed into the model as a variable.

Also differences in different companies 'sizes were not controlled, once they were not considered in the variables calculus.

5.3. Further Research

Once this is a subject only developed in recent studies, it would be interesting to try or add different variables to the model used. The comment about the impact of the financial / economic crisis is an example.

We might also need to deepen the reasons behind what we've evaluated as «different motivations» for EM among non-listed firms and listed companies. While we've offer our conclusions based on several referenced authors hypothesis, bridging descriptions, thoughts, reasons and explanations, there is room for more specific and direct investigation about each of the studied variables considered individually.

Future investigation should also be able to determine whether unevenly weighting subject variables would better mirror their true influence when reasoning firm EM motivations.

Finally, we've used a 10 year reference sample but some of the mentioned authors have their thoughts based in rather dissimilar time periods. Because time makes the study ever more valuable, and the results become more trustworthy as the sample period gets wider, one should be able to also reflect time as a variable.

Last but not least, behavior should one should not be underestimate as a major determinant. This suggests future studies could balance the exact and the social components of EM, bringing both assessments together.

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7. Attachments

Table I – Variables

Model Variables	Database Variables	Literature Reference
$AQi = \beta 0,i + \beta 1,i\ Big\ 4i + \beta 2,i\ Sizei + \beta 3,I\ LEVi + \beta 4,i\ \Delta Growthi + \beta 5,i\ ROAi + \beta 6,i\ Countryi + \beta 7,i\ Industryi + \varepsilon i$		
Big 4i	Auditor name	DeAngelo (1981)
Sizei	Total assets	Tendeloo e Vanstraelen (2008); Watts e Zimmerman (1990); Young (1999); Bonne J. (2010)
LEVi	(Current Liabilities + Non Current Liabilities) / Total Assets	Tendeloo e Vanstraelen (2008); Watts e Zimmerman (1990); Young (1999); Becker et al. (1998)
ΔGrowthi	Operating Revenue	Tendeloo e Vanstraelen (2008); Boone (2010)
ROAi	ROA using Net income (%) (Net income / Total Assets) * 100	Tendeloo e Vanstraelen (2008); Davis (2009)
Countryi	Country name	Tendeloo e Vanstraelen (2008)
Industryi	Industry name	Tendeloo e Vanstraelen (2008); Che et al. (2008)

Table II – Industry Dimension

Industry	Number of companies
A. Agriculture, forestry and fishing	64
B. Mining and quarryng	29
C. Manufacturing	1677
D. Electricity, gas, steam and hair conditioning supply	37
E. Water supply, sewerage, waste management and remediation activities	58
F. Construction	475
G. Wholesale and retail trade; repair of motor vehicles and motorcycles	935
H. Transportation and storage	335
I. Accommodation and food service activities	221
J. Information and communication	379
L. Real estate activities	71
M. Professional, scientific and tecnhical activities	469
N. Administrative and support service activities	417
P. Education	121
Q. Human health and social work activities	297
R. Arts, entertainment and recreation	104
S. Other services activities	68

Table III – Descriptive Statistics

	Mean	Median	Standard Deviation	Variance	Skewness	Kurtosis	Amplitude	Minimum	Maximum	Percentiles - 25 - 50 - 75
										0,036
AQ	0,265	0,077	0,963	0,928	15,055	365,45	44,903	0	44,903	0,077
										0,172
										0,463
Lev	0,64	0,655	0,293	0,086	7,06	242,53	15,925	-0,042	15,884	0,655
										0,815
										3,799
Size	4,351	4,263	0,778	0,605	0,52	0,378	6,486	1,417	7,903	4,236
										4,852
										-0,034
Growth	-1,968	0,011	339,909	115537,823	-173,152	32079,76	69740,061	-67345,18	2394,882	0,011
										0,158
										0,005
ROA	0,095	0,035	1,738	3,019	1,947	684,403	138,186	-70,243	67,943	0,035
										0,083

Table IV – Descriptive Statistics for AQ for each industry

	Mean
AQ_A	0,320
AQ_B	0,367
AQ_C	0,238
AQ_D	0,520
AQ_E	0,630
AQ_F	0,241
AQ_G	0,209
AQ_H	0,400
AQ_I	0,131
AQ_J	0,187
AQ_L	0,366
AQ_M	0,272
AQ_N	0,301
AQ_P	0,397
AQ_Q	0,335
AQ_R	0,380
AQ_S	0,445